UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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ART UNIT	PAPER NUMBER
2419	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/524,786	HEIDEPRIEM, SEBASTIAN
Office Action Summary	Examiner	Art Unit	
	MATTHEW CAMPBELL	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>12 September 2005</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>14-26</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>14-26</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on <u>12 September 2005</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2.   Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites that a unit forwards received data based on locally stored topology information and addressee information transferred with the received data. However claim 17, from which claim 18 depends, recites that topology information is transferred with the data. Therefore, it is indefinite whether a unit forwards received data based on locally stored topology information and addressee information transferred with the received data or based on topology information transferred with the received data and addressee information transferred with the received data.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   **Claims 14-16, 25 and 26** are rejected under 35 U.S.C. 102(b) as being

anticipated by Shuey *et al.* (US Pat. 5,874,903), "<u>RF repeater for automatic meter

reading system</u>".

Regarding claim 14, Shuey teaches a device for transmitting, exchanging, and/or

forwarding data and/or information, in the context of industrial process-and/or

automation technology, between a first unit and at least one second unit of a network of

multiple units, each having at least one microprocessor associated therewith, wherein:

said first unit and said at least one second unit is one of: a transmitter or sensor,

which provide a measured value for determining a physical or chemical parameter

(meters 12 are gas, water or electric sensors, Col 4 Lines 42-64 and Fig. 4);

said network of multiple units belong to an interconnected group, which

communicate with one another either directly or indirectly via at least one intermediate

unit (meters 12A-12C communicate with direct RF communications and node 12D

communicates indirectly by routing through meter 12C, Col. 5 Lines 1-22 and Fig. 5);

and

each of the units of said network of multiple units has at least two physical,

communication interfaces (meter 12 includes RF transceiver for radio communications

and modem for telephonic communications, Col. 4 Lines 1-13 and Fig. 2).

Regarding claim 15, Shuey teaches said transmitter or sensor is one of: a fill level

measuring device, a pressure transmitter, a flow rate sensor, a temperature sensor, or

an analytical device (meters 12 analyze currents and/or voltages to meter gas, water or

electric usage, Col 4 Lines 42-64).

Regarding claim 16, Shuey teaches each unit of said network of multiple units is one of

: a communication unit, a router, a control/evaluation unit, a parametering unit, or an

actuator (meters 12A-12D are communication units that communicate with each other

and a responsible node 18, Fig. 5).

Regarding claim 25, Shuey teaches said units of said network of multiple units are

assigned a converter, such that said units can communicate with one another via

different types of transmission (meters 12 are capable to communicate with one another

via either Amplitude Shift Keying or Frequency Shift Keying, Col. 5 Lines 23-50).

Regarding claim 26, Shuey teaches connection lines, or fiber optic cables, or paths of

so-called wireless data and/or information transfer, are provided as communication

paths (RF transceivers using paths of so-called wireless data and modems using

connection lines, Col. 4 Lines 1-13 and Fig. 2 and Fig. 5).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating
            obviousness or nonobviousness.

7.   **Claims 17-19, 21 and 24** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Shuey in view of Melnik (US Pat. 5,978,364), "Method for routing

data packets within a wireless, packet-hopping network and a wireless network for

implementing the same".

Regarding claim 17, Shuey does not explicitly teach but Melnik from the same field of

endeavor teaches said at least one microprocessor of said first unit contains information

concerning the topology of the network, transmits data and/or information to said at

least one second unit; and preferably the information concerning the topology is

transferred with the data and/or information (compact partial routing table stored in node

memory, Col. 6 last ¶; unique node address transmitted in address byte of packets, Col.

7 Lines 21-34). It would have been obvious to one having ordinary skill in the art at the

time of the invention to modify Shuey to incorporate said at least one microprocessor of

said first unit contains information concerning the topology of the network, transmits

data and/or information to said at least one second unit; and preferably the information

concerning the topology is transferred with the data and/or information by implementing

a compact partial routing table stored in node memory and a unique node address

transmitted in address byte of packets as taught by Melnik. The motivation to do so

would have been to increase communications efficiency of the network (see Melnik, Col.

7 lines 1-10).

Regarding claim 18, Shuey does not explicitly teach but Melnik from the same field of

endeavor teaches the information concerning the topology is saved in the

microprocessors of at least one portion of the units of said network of multiple units,

such that the corresponding unit, on the basis of the addressee to which the data and/or

information is to be sent, recognizes along which communication path, or along which

alternative communication path, it must transmit or forward the data and/or information

(forwarding nodes compare address contained in ADDR byte of received packets to

their stored address tables in order to determine a forwarding path, Col. 12 Lines 19-

39). It would have been obvious to one having ordinary skill in the art at the time of the

invention to modify Shuey to incorporate the information concerning the topology is

saved in the microprocessors of at least one portion of the units of said network of

multiple units, such that the corresponding unit, on the basis of the addressee to which

the data and/or information is to be sent, recognizes along which communication path,

or along which alternative communication path, it must transmit or forward the data

and/or information by implementing comparing the address contained in the ADDR byte

of a received packet to addresses in their stored tables to determine a forwarding path

as taught by Melnik. The motivation to do so would have been that using stored lookup tables in lieu of including full routing information in each packet would reduce packet size (see Melnik, Col. 7 lines 1-10).

Regarding claim 19, Shuey does not explicitly teach but Melnik from the same field of endeavor teaches a unit of said network of multiple units determines the topology of the network of multiple units via communication with a neighboring unit or units, stores the acquired information in a memory unit, and thus recognizes along which communication path or along which alternative communication path it preferably transmits, or forwards, the data and/or information (nodal connectivity information obtained during network initialization process used to determine which nodes will be repeaters, Col. 11 Lines 12-35). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Shuey to incorporate a unit of said network of multiple units determines the topology of the network of multiple units via communication with a neighboring unit or units, stores the acquired information in a memory unit, and thus recognizes along which communication path or along which alternative communication path it preferably transmits, or forwards, the data and/or information by implementing a nodal connectivity information obtained during a network initialization process to determine which nodes will be repeater nodes as taught by Melnik. The motivation to do so would have been to determine the most efficient routes for packet transmission which maximizes the probability of success (see Melnik, Col. 11 Lines 12-35).

Regarding claim 21, Shuey does not explicitly teach but Melnik from the same field of
endeavor teaches a unit of said network of multiple units forwards the data and/or
information to any one unit of said network of multiple units; and the respective unit of
said network of multiple units receiving the data and/or information forwards the data
and/or information in the same manner until the data and/or information reaches the unit
of said network of multiple units to which the data and/or information is addressed
(forward along additional legs until destination node receives packet, Col. 12 Lines 41-
52). It would have been obvious to one having ordinary skill in the art at the time of the
invention to modify Shuey to incorporate a unit of said network of multiple units forwards
the data and/or information to any one unit of said network of multiple units; and the
respective unit of said network of multiple units receiving the data and/or information
forwards the data and/or information in the same manner until the data and/or
information reaches the unit of said network of multiple units to which the data and/or
information is addressed by implementing forwarding along additional legs until the
destination node receives the packet as taught by Melnik. The motivation to do so would
have been to reach nodes that are outside of the transmission range of first leg
repeaters (see Melnik, Col. 12 Lines 41-52).

Regarding claim 24, Shuey does not explicitly teach but Melnik from the same field of
endeavor teaches a unit of said network of multiple units, in the case of a large amount
of data and/or information to be transferred, selects multiple communication paths
independent of one another, in order to transfer the data and/or information (multiple

path routing method, Col. 15 Lines 44-62). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Shuey to incorporate a unit of said network of multiple units, in the case of a large amount of data and/or information to be transferred, selects multiple communication paths independent of one another, in order to transfer the data and/or information by implementing a multiple path routing method as taught by Melnik. The motivation to do so would have been to increase the probability of successful routing (see Melnik, Col. 15 Lines 44-62).

8.   **Claim 23** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shuey in view of Lennartsson (US Pat. 7,371,859), "System for providing data communications between a plurality of measurement data generating/receiving modules connected to a common communication bus".

Regarding claim 23, Shuey does not explicitly teach but Lennartsson from the same field of endeavor teaches said units of said network of multiple units transfer data and/or information according to predetermined priority criteria (transmit a message with a unique priority attached to it, Col. 7 Lines 11-25). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Shuey to incorporate said units of said network of multiple units transfer data and/or information according to predetermined priority criteria by implementing transmitting messages with unique priorities attached to them as taught by Lennartsson. The motivation to do so would

have been to give time critical messages a high priority of reaching their destination

(see Lennartsson, Col. 7 Lines 11-25).

9.   **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shuey

and Melnik and further in view of Finn *et al*. (US 6, 728,205 B1), "Method and apparatus

for automatic protection switching".

Regarding claim 20, Shuey as modified by Melnik does not explicitly teach but Finn

from the same field of endeavor teaches a unit of said network of multiple units

determines once, sporadically, or cyclically, the capacities of communication paths to

the different units of said network of multiple units communicating with it directly or

indirectly, and stores the individual communication paths with their different

classifications in an assigned memory unit (exchange additional information including

known or expected traffic, maximum load on a link, capacity pre-planning, etc., Col.17

lines 41-53). It would have been obvious to one having ordinary skill in the art at the

time of the invention to modify Shuey and Melnik to incorporate a unit of said network of

multiple units determines once, sporadically, or cyclically, the capacities of

communication paths to the different units of said network of multiple units

communicating with it directly or indirectly, and stores the individual communication

paths with their different classifications in an assigned memory unit by implementing

exchanging additional information including known or expected traffic, maximum load on

a link and capacity pre-planning as taught by Finn. The motivation to do so would have

been to further increase forwarding efficiency.

10.   **Claim 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shuey

and Melnik and further in view of Nader *et al.* (US 7,342,897 B1), "Network verification

tool".

Regarding claim 22, Shuey as modified by Melnik does not explicitly teach but Nader

from the same field of endeavor teaches a unit of said network of multiple units only

forwards the data and/or information as long as a predetermined number of forwardings

is not yet attained (each device increments the hop-count field until 15 is reached and

the packet is dropped, Col. 26, bottom). It would have been obvious to one having

ordinary skill in the art at the time of the invention to modify Shuey and Melnik to

incorporate a unit of said network of multiple units only forwards the data and/or

information as long as a predetermined number of forwardings is not yet attained by

implementing the hop-count field ass taught by Nader. The motivation to do so would

have been to eliminate routing loops.

Conclusion

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to MATTHEW CAMPBELL whose telephone number is

571-270-3988. The examiner can normally be reached on Monday through Friday from 8:00am until 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MTC
2-6-2009

/Wing F. Chan/
Supervisory Patent Examiner, Art Unit 2419
2/9/09